

Name: _____

Test date: _____

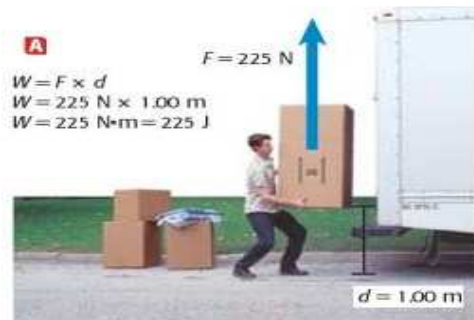
Work and Motion Review Sheet

Directions: Match the law to the following situations by writing its letter on the line:

<p>_____ Inertia</p> <p>_____ Equal and opposite reaction</p> <p>_____ Something in motion will stay in motion unless acted upon by an outside force</p> <p>_____ Force = mass x acceleration</p> <p>_____ How rockets are launched into the sky</p> <p>_____ Heavier objects take more force to accelerate</p> <p>_____ You keep moving in a car after the driver slams on the brakes</p> <p>_____ Explains why seatbelts are important to wear</p>	<p>a) Newton's 1st Law of Motion</p> <p>b) Newton's 2nd Law of Motion</p> <p>c) Newton's 3rd Law of Motion</p>
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Directions: Match the vocabulary word with the following definitions:

<p>_____ Lever, pulley, wheel & axle, and inclined plane</p> <p>_____ How much machines multiply force or distance</p> <p>_____ = force x distance</p> <p>_____ a force going in the opposite direction of motion</p> <p>_____ one force is stronger than the other</p> <p>_____ both forces are equal; causes NO motion</p> <p>_____ Newtons, N</p> <p>_____ Joules, J (these = Newtons x meters; "Newton meters")</p>	<p>d) Work</p> <p>e) Mechanical advantage</p> <p>f) Simple machines</p> <p>g) Balanced forces</p> <p>h) Unbalanced forces</p> <p>i) the units of work</p> <p>j) the units of force</p> <p>k) friction</p>
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1. Look for similarities and differences between the figures above. The man in the picture lifts the same box using two methods (A and B). Which one is more work? Why?

2. Ramon pushes on his car with a force of 15 N for 5 minutes, but it doesn't move. How much work has he done? *Explain your answer and refer to the formula for work.*

WORK:

3. An apple weighing 2 N falls a distance of 2.2 m in 0.8 seconds. How much work is done on the apple by the force of gravity?

Force = _____	Formula: $W =$
Distance = _____	Plug in the numbers: $W =$
Work = ?	Solve:

4. A student walks 800 meters to school carrying a backpack that weighs 20 N. How much work did she do to the backpack?

Force = _____	Formula: $W =$
Distance = _____	Plug in the numbers: $W =$
Work = ?	Solve:

5. A crane with a mass of 2,000 kg uses an average force of 3,100 N to lift a girder 19 m. How much work does the crane do?

Force = _____	Formula: $W =$
Distance = _____	Plug in the numbers: $W =$
Work = ?	Solve:

6. A bicycle's brakes apply 15 N of frictional force to the wheels as a bike moves 8.0 m in 4.5 seconds. How much work do the brakes do?

Force = _____	Formula: $W =$
Distance = _____	Plug in the numbers: $W =$
Work = ?	Solve:

REVIEW OF SPEED:

The formula for speed is:

7. A driver is traveling southwest on a dirt road. She traveled 510 miles in 10 hours. **What was her average speed?**

Distance = _____	Formula: speed =
Time = _____	Plug in the numbers: $s =$
Speed = ?	Solve:

8. During a race, a sprinter runs 8.5 meters in 9.13 seconds. **What is his average speed** during the race?

Distance = _____	Formula: speed =
Time = _____	Plug in the numbers: $s =$
Speed = ?	Solve:

9. **What is the speed** of a charter bus that travels 180 km South in 2 hours?

Distance = _____	Formula: speed =
Time = _____	Plug in the numbers: $s =$
Speed = ?	Solve: